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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/538,577	03/29/2000	Necdet Uzun	UZUN-1	6049

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EXAMINER	
ABELSON, RONALD B	
ART UNIT	**PAPER NUMBER**
2666	3

DATE MAILED: 03/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/538,577	UZUN ET AL.	
	Examiner	Art Unit	
	Ronald Abelson	2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 March 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *5-20* is/are allowed.

6)☒ Claim(s) *1-4* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 March 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claim 1 rejected under 35 U.S.C. 103(a) as being unpatentable over Dally (US 6,285,679) in view of Kung (Credit Based Flow Control for ATM Networks).

Regarding claim 1, Dally teaches a method and apparatus for a switch (fig. 9) having Nin input ports applied to Kin input shared blocks (fig. 9 box 58), a central switching fabric (fig. 9 box 66), and Nut output ports (fig. 9 see To Packet Buffer) provided from Kout output shared blocks (fig. 9 see To Packet Buffer), a method for scheduling packets queued at the input shared blocks for application to the output ports (credit based flow control, col. 10 lines 19-23).

Although Dally teaches credit based flow control, the reference is silent on its implementation.

Kung teaches a) providing, for each of the input shared blocks, an indication of a number of links reserved by the input

shared block to each of the output shared blocks (pg. 41 col. 2 Credit-Based Flow Control, 1st paragraph).

Kung teaches b) providing each of the input shared blocks with a token, each token corresponding to an output shared block and including a value indicating a number of links available to the associated output shared block (receiver sends credits to sender, pg. 41 col. 2 Credit-Based Flow Control, 1st paragraph)

Kung teaches c) if it is determined that an input shared block needs links to an output shared block associated with a token held by the input shared block, then i) reserving links, to the extent available as indicated by the token, to the output shared block (pg. 41 col. 2 Credit-Based Flow Control, 1st paragraph). Note the reserved links are proportional to the number of credits received.

Kung teaches c) ii) updating the value indicating the number of links available to the associated output shared block (pg. 43 col. 1 last paragraph).

Kung teaches c) iii) updating the value of the indication of a number of links reserved by the input shared block to the associated output shared block (sender forwards a data cell, it decrements its credit balance, pg. 41 col. 2 Credit-Based Flow Control, 1st paragraph).

Regarding claim 2, Kung teaches passing the token to a next input shared block at the end of a reservation time slot (receiver sends credits to the sender, pg. 41 col. 2 Credit-Based Flow Control, 1st paragraph).

Regarding claim 3, Kung teaches delivering cells to the central switch fabric based on their currently reserved links at the end of each cell slot (After having received credits, …., pg. 41 col. 2 Credit-Based Flow Control, 1st paragraph).

Regarding claim 4, destroying the tokens at the end of each cell slot (decrements, pg. 41 col. 2 Credit-Based Flow Control, 1st paragraph) and generating new tokens at each input shared block at the end of each cell slot (compute a new allocation, pg. 43 1st column, last paragraph).

Therefore it would have been obvious to one of ordinary skill in the art, having both Dally and Kung before him/her and with the teachings [a] as shown by Dally, a method for scheduling packets queued at the input shared blocks for application to the output ports, and [b] as shown by Kung, the implementation of the credit-Based Flow Control, to be motivated to modify the system of Dally by implementing credit-Based Flow

Control according to Kung. This modification can be performed in software. This would improve the system since credit flow control works well with data that is sent in bursts (Kung: pg. 41 2nd col. 2nd full paragraph) which is often associated with ATM.

Allowable Subject Matter

3. Claims 5-20 are allowed.

Regarding independent claims 5, 12, and 19, Khacherian (US 6,542,507) teaches a switch (fig. 3) having Nin input ports applied to Kin input shared blocks (fig. 3 box 312), a central switching fabric (fig. 3 box 324), and Nout output ports (fig. 3 boxes associated with output of box 322) provided from Kout output shared blocks (fig. 3 box 322), a method for scheduling packets queued at the input shared blocks for application to the output ports (Request To Release and Grant To Release).

Khacherian teaches for each of the input shared blocks, providing a request token associated with one of the output shared blocks, each of the request tokens including an indication based on a number of requested links for the output shared block with which it is associated ();

However, none of the available art of record teaches or fairly suggests for each of the input shared blocks, providing a

release token associated with one of the output shared blocks, each of the release tokens including an indication based on a number of released links for the output shared block with which it is associated. The applicant provides reasoning for the release token (pg. 43 Section 4.2.3) wherein the release tokens are used by an input block to lend links to the other input blocks.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Abelson whose telephone number is (703) 306-5622. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (703) 308-5463. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RA

Ronald Abelson
Examiner
Art Unit 2666

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3/11/04

Seema S. Rao 3/19/04
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